

ITEMS OF INTEREST.

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Shots from the Profession.

THE ESTHETIC IN OPERATIVE DENTISTRY.

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We have certainly reached a stage in the progress of our specialty when the question should be calmly and rationally considered: What constitutes esthetic dentistry? We have been so occupied in the past forty or more years in building a profession, that the details have in some measure been lost sight of, and they are only now beginning to receive the attention their importance demands. This is manifested in the questioning of old ideas, and a more careful consideration of the new; in a determined seeking for truth regardless of authority,—an iconoclastic disposition which, unless properly directed, may run to serious evil; in a word, the profession in its ideas and practices is fast entering a condition bordering on the chaotic. It is, therefore, well to stop to consider whither tends this unsettled condition, and what means can be taken to organize the active thought and direct the practice to a course of procedure worthy an intelligent body of workers. This cannot be accomplished by one man, but must be the work of many. That the present is an important period for active effort must be conceded; for if the disruptive tendencies, now so prevalent, be not properly directed, there must be a serious deterioration in theory and practice as well as in esthetic culture.

The dentist of to-day is the outgrowth of the dental mechanism of the past, whether we view it from the stand-point of the so-called operative or the mechanical branch. The ideas prominently ingrafted on the earlier workers were purely of the latter order. To be a good worker in metals as a base for artificial teeth, or a good filler of cavities, was the sole aim and ambition of the earlier dentist. The difficulties that hedged round both these performances naturally induced a close absorption of all the intellectual powers of the period, and that it was not unworthily bestowed, the skill manifested to-day is the honorable evidence. This constant and earnest effort to do a few

things well, while worthy of the highest commendation, has a tendency to force the mental strength into set channels, and to just that extent weakens its power to grasp subjects in their entirety. To illustrate:—the dental mechanic, intent on making an artistic piece of work *out of the mouth*, has failed to cultivate, it may be, the ideal of an artistic structure *in the mouth*, and, while his lines of beauty may be skilfully arranged for the one, they are out of proportion and inappropriate for the other. So the filler, in his anxiety to save teeth, builds his gold till it assumes and exceeds, in his eye, the loveliness of nature. Thus, gradually, but surely, we have developed mechanism in both branches at the expense of the artistic, while the true work should combine all that is possible of both. These thoughts are, doubtless, truisms to all, and will probably find no opponents; but, while the facts are admitted, such is the perversity of human nature, that they are rarely acted on. Thus, while the extreme of effort in the operative has brought our gold-work in the mouth to such a degree of mechanical perfection, that any advance with that metal cannot be looked for or desired, it is evident this very perfection has generated sentiments of opposition, in both patients and operators, that has resulted in the development of a new school that entirely repudiates this metal. Between these two extremes we have all shades of thought and practice.

It is not the purpose of this brief paper to enter upon the discussion of this subject, but rather to suggest another direction that may possibly be of value to some who aim to be something more than mere extremists. We are not all molded alike. We cannot all be painters and sculptors; neither are we all so formed by nature that we can work up a beautiful ideal, or, even if capable of so doing, can we give it practical form.

Dentistry to-day occupies a very similar relation to esthetic culture that our country does to the arts. It has been the constant reproach of the old world that we were a nation of shopkeepers and mechanics, and we have been sneeringly told that high art was an impossibility from such a basis of unrefinement. The true observer of men and nations, and, above all, of the gradations of mental progress, well understands that the higher expressions of intellectual force are but a combination of lower and, it may be, grosser forms. The mechanic at his bench, the house-wife with her needle, are each in their way cultivating form and ideality, and laying the foundations for a higher expression of these same qualities, and rendering it possible for the finest manipulation of art in the future. Thought concentrated in one direction in the parents becomes, by the law of inheritance, the fixed and higher talent in the child, and thus, step by step, and as the result of progressive development, advances are made and conditions established for the ideal artist. What is true of individuals

is true of nations, and it is reasonable to infer that the development of this country must be toward the finest exhibition of artistic excellence the world has ever seen. This is already becoming manifest, and, unless unforeseen drawbacks occur, the prophecy of a Munich professor, made to an artist friend, "that the time would come when Europe would send pupils to America to study art," will have its realization.

The same law of evolution holds good in our profession; and, while we may not be equal to our idealistic conception, we may at least reach toward it and endeavor to correct each other, and so hasten a better day. It is with this idea this paper has been written.

The dentistry of the present is essentially, in many of its manifestations, barbaric. It is the unrefined expression of the mentality of the bench-worker, not yet advanced through the natural siftings to a higher condition, and hence we witness those fearful monstrosities in both sections of our art, but specially in that of the mechanical branch. The latter has been ably illustrated by Dr. W. Warrington Evans, of Washington, D. C., in a series of papers in the *Dental Cosmos*, 1880-81, and I am, therefore, saved reference to that portion of the subject, further than to refer and indorse most heartily his conclusions. The operative section has been allowed to have its own way, drifting more and more into pure mechanics, and becoming more and more self-asserting, more and more a violation of artistic laws, and more and more depending for its success on the skill of the mechanic rather than the brain of the operator. The point in the history of the profession from which we may date this departure was the introduction of cohesive foil. This, while it marked a great advance, introduced a tendency to exaggerated expressions and exaggerated ideas of the value of gold. If it did not give rise to the now exploded maxim, "The tooth that is worth filling at all is worth filling with gold," it at least enforced it; and he was a bold man who dared to express a contrary opinion. The extreme limit was finally reached, and a natural reaction set in with its equally reprehensible ideas.

That gold can be worked into forms of beauty, it needs no argument to prove; that it can be made to serve the purposes of preservation and use, every day demonstrates; but that it adds anything to beauty, when combined with the natural organs, all who claim any taste must deny. It belongs to the incompatibles; its strong contrasts of color must ever debar it from the roll of the beautiful in this connection; and yet, just here, in some minds, it has its greatest value. In nature we have the gradations of color peculiarly demonstrated in the teeth, changing from one color at the edge to a darker at the neck, till through almost imperceptible variations from teeth to gums and from these to lips, we have a perfect harmony of expression.

Ruskin says, "No color exists in nature, under ordinary circumstances, without gradation. * * * The preciseness and pleasantness of the color itself depends more on this than on any other of its qualities, for gradation is to color just what curvature is to lines, both being felt to be beautiful by the pure instinct of every human mind, and both considered as types expressing the law of gradual change and progress in the human soul itself."

Building a tooth was in former years considered the highest expression of our art. So beautiful was it in the estimation of some, that to make a gold front tooth and shape it in the form of the original, was regarded as an exquisite piece of dental mechanism, and the operator viewed his skill with the satisfaction of having accomplished a masterpiece. In one sense this was true. It was a masterpiece of pure skill, but it was direct evidence of skill misapplied—a contribution to a barbaric taste. It had the merit of being useful, while the gold ring in the nose of the savage has not; but both deserve to rank with the productions of an uncultured era. The production of the few teeth of this kind has been followed, through the introduction of machinery and the easier application of force, by the presentation of many such operations, till we have the mouth in a glitter of disagreeable contrasts that are disgraceful to us as a profession, and are building in our patients false standards of taste, for which the doubtful advantage of use does not furnish compensation.

The so-called axiom, that "any tooth, however defective, if it can be saved and made to subserve a useful purpose, is better than a false one," has had largely to do with this. That this is based on incorrect ideas and is mere assumption, must be apparent. Even under old modes of insertion of artificial teeth it was never true, and now, with the advances made in this department, it is even less so. It is assuming that artificial teeth are partial failures; that they are, at their best, but imperfect substitutes, while the truth is, in the large majority of cases, they are not only substitutes, but perform the work so perfectly that the wearers do not appreciate any difference in the ability to masticate food or the correct articulation of sound between these and the natural organs. This has received careful consideration from the writer, and it is a positive conviction that the attempt to save a certain class of teeth at the risk of permanent disfigurement of the patient, is a stretch of professional skill wholly unwarranted. That this will be regarded as an extreme statement, and at variance with accepted teaching, I am well aware, but it remains for those who controvert it to demonstrate its incorrectness. I wish, however, to be distinctly understood at this point. While condemning the undue exhibition of gold on the anterior teeth, I do not wish to be understood as opposing its free use in posterior teeth, for here use super-

sedes taste; indeed, that does not enter at all as a question at issue. Neither would I condemn the moderate exhibition of gold on approximal surfaces with labial fractures, but I do condemn that excessive use of this material on the labial surfaces, which carries, by its incongruity, a sense of disgust to every beholder. I need allude here only to the minor manifestation so frequent of this sin against taste in the filling, oftentimes large, of all the anterior teeth at the upper labial thirds with gold. The expression that this gives to an otherwise beautiful face need only be seen to be fully appreciated. Attempts have been made in this form of caries to insert a section of porcelain or of tooth-bone, but this, while an effort in the right direction, has been only partially successful, and it is by no means the general practice. Gold is the one material we have for this operation, and any departure from its use is regarded as worthy of severe condemnation. It is true we have no material that equals it for tooth preservation, but it is a question whether a poorer one nearer the color of the tooth would not be better than a piece of work which is a constant monument to our ignorance of the law of contrasts. Yet, while this is asserted in regard to these peculiar and most annoying cavities, even here gold may have a very proper place, provided an intelligent consideration of the probable issue of such an operation be carefully made—such as length of lips, facial muscular movements in talking, laughing, etc., the sex of the individual, and the extent of the lesion.

It is not to gold, primarily, that objection is made, but to its use in inappropriate places. As a material for filling, it will, probably, always retain a royal position; properly used, it is the best material for a very large class of cavities; but to assert that its proper place is to restore lost teeth in the anterior parts of the mouth, or to universally repair lost sections, is claiming that which no refined intelligence can tolerate. The influence of such work is demoralizing on both operator and patient. It is an ever-present sign of partial culture; and partial culture in art mechanism, as in everything else, is just so far an evidence of inefficiency, if indeed it is not positive evidence of it. The true dentist is something more than can be made by mallet and a sheet of metal. He is a combination of varied experiences of the past and present. He aims to grasp reasons and to search into the philosophy of things. His diagnoses and prognoses are carefully made, and his course is guided by his conclusions. He regards his material, whatever it may be, simply as a tool; and, as he cannot effect the best results with one form of instrument, he must make use of many. He believes that the intelligent adaption of means to ends is better than a blind following that leads only to inconsequential results. He refuses to replace natures' destructions by a disfigurement of nature; and, above all, he aims to combine the

practical with the esthetic, that use and beauty may go hand in hand, that through his work his profession may receive a new impetus toward a higher standard of excellence.—[Odontological Society of Pennsylvania.]

HOW SHALL THE PHYSICIAN CLEANSE HIS HANDS?

Dr. Foster, of Amsterdam, contributes an article on this subject to the *Centralblatt für Klinische Medizin*. He calls attention to the great importance of physicians thoroughly disinfecting their hands before leaving a case of infectious disease (specially any of the exanthemata), and at the same time he asserts that few of the disinfectants now in use really have the power of destroying those microspores which are recognized as so dangerous an element in modern medicine. After a series of careful experiments in the hygienic institute at Amsterdam, in which every precaution was taken to avoid error, the author decided that a solution of carbolic acid of the strength of two and a half per cent. was not capable of "sterilizing" the finger, but that a solution of corrosive sublimate, of the strength of one to two thousand, formed a reliable antiseptic wash. He urges that the latter be adopted by all physicians as well as surgeons.—*N. Y. Med. Jour.*

A Breach of Professional Etiquette.—The following story is told of the celebrated Oppolzer. Shortly after his arrival in Vienna, he was consulted by an invalid, whom he advised, after a somewhat hasty examination, to go to Pistyan, in Hungary, and take the waters. After several months the man, whom the professor had forgotten, again presented himself with an aggravation of all his symptoms, and said he had just returned from a course of the Pistyan waters. The professor examined him, this time rather more carefully, and then with some wrath asked him what confounded ass had advised him to go there, as it was the worst thing he could possibly have done. Moral: Always speak well of your neighbor.—*Science News.*

The Dental Department of the National University.—I was much surprised to read in July ITEMS the eulogistic notice of the National University of the District of Columbia.

Where did you get it? It is the college none of the better dentists recognize at all, and when it was founded they could not get a reputable dentist to take a chair. None of the dental faculty are recognized by the better dentists—as dentists.

It is the college I told you of when here. The law department is all right. DR. ———.

THIRD DENTITION.

DR. W. D. DUNLAP, SELMA, ALA.

Reports of third dentition are of more frequent occurrence than the authorities admit. It is probable every dentist can tell of scores of cases reported by their constituents. Albeit few can report from actual observation. I have never seen one, and the result of thirty years' experience and observation tends to throw doubt on all such reports. While admitting their possibility, we think a careful examination and diligent inquiry will explain away these apparent efforts of nature to develop a third set. Recently an examination of a reported case showed nothing more than the appearing of a few fangs. Years before they had been broken off, and now, by the gradual absorption of the gums they appeared on the surface, so smooth and sound they were taken for new teeth. The possessor began to have high hopes that the ridge would soon fill and put the mill to work grinding even a third time—but, alas! the grinders have ceased because they are few.

A recent case is of a different character. A little girl of ten years was brought to me for advice. Some twelve months before, she had a fall and knocked from its place a central incisor. Its mate is a very large tooth and uninjured. Some months after the accident, a large and perfectly developed tooth made its appearance on a line with the missing one, but at least an eighth of an inch anterior. It slowly came down, and was now nearly one-eighth of an inch above the line of the rest of the teeth. The surrounding parts looked healthy, and I then and there had to determine whether to give up my belief as to third dentition, or prove that what I saw did not exist—so it seemed to me. I plainly told the parent that I was firm in the belief that nature did not provide a third tooth for such a case (not considering supernumeraries), and we must find an explanation in a more natural way. The parent was asked if the tooth was seen after the accident, and what became of it. The reply was that it had not been found. Did the child suffer much and for some time after the accident? The reply was that the face was much swollen and the child had suffered greatly; a discharge had taken place through the nose and there was still pain felt in the region. I now called the attention of the mother to a small fracture on one corner of the tooth and informed her that the tooth had been driven up instead of being knocked out, and advised extraction. This was easily done, the attachment being very weak, and an examination showed the nerve dead. So this case was disposed of.

The point of interest in this case rose from the natural appearance both of the tooth and of surrounding parts, the only ground for suspicion being the location of the new tooth. The mother had come

to me to determine whether the lateral should be extracted to make room for the supposed new tooth, but the facts called for different treatment.

Several cases of suppressed teeth that made their appearance after extraction of a number in preparing a jaw for artificial teeth, could be reported; but as they are probably common to us all, the particulars would not be interesting.

NEW MODE OF HARDENING PLASTER.

Mr. Julhe, in a note presented to the Academie des Sciences, describes some experiments that he has performed with a view to rendering the use of plaster still more general.

Of all materials used in building, plaster is the only one which increases in bulk after its application, while mortars and cements, and even wood, undergo shrinkage and cracking through drying. When applied in sufficiently thick coats to resist breakage, it offers then a surface that time and atmospheric variations will not change, provided it be protected against water. But it is necessary to give this material two properties that it lacks—hardness and resistance to crushing. This is what Mr. Julhe proposes to effect by his process.

Six parts of plaster are mixed with one part of finely sifted unslacked lime. This mixture is used like ordinary plaster for moulding any object whatever, and when once dry, the object is soaked in a solution of a sulphate having a base precipitable by lime, and the precipitate of which is insoluble. These form sulphate and oxide of lime, both of them insoluble, which fill the pores of the object and render it hard and tough.

Sulphates of zinc and iron are the salts that answer the purpose best. With the first the object remains white, and with the second it gradually assumes the tint of sesquioxide of iron.—*Chronique Industrielle*.

The Effect of Inorganic Materials.—I do not regard the administration of combinations of inorganic materials to be of any value in the nutrition of tooth-tissue. To make them of value they must first be presented in the form given us by lower organisms, and from these natural selections will follow suitable to each organ. Observations in lime-water districts lead positively to the conclusion that the water thus impregnated is utterly valueless, if, indeed, it does not have a decidedly injurious influence. The greatest change in the oral secretions from a neutral to an acid condition is at night or during periods of rest.—JAMES TRUMAN.

Speak not ill of friends.

OUR UNSEEN ENEMIES.

DR. H. B. SIZER.

"Bacteria" and "Bacilli" are plurals of a Greek and a Latin word, which have almost the same meaning, *i. e.*, "rod-shaped," and are applied to certain low forms of life, which are staff-shaped, and about $\frac{1}{10000}$ of an inch in length, but vary greatly in size in various species.

They abound, in all putrescent or fermenting mixtures containing organic matter, and are the *cause* of fermentation and putrefaction. Some are present in, and the cause of, certain of the "zymotic" or "ferment" diseases, such as "malignant pustule," erysipelas, tuberculosis, etc.

"Micrococci" are spheroidal bacteria, and very small, never more than $\frac{1}{25000}$ of an inch in diameter, often less.

If we keep out the bacteria, surgical wounds never suppurate, and the discovery of this fact has made hundreds of operations possible, which of old were never thought to be within the reach of art, hence the wonderful success of antiseptic surgery.

The disease called pyæmia consists of infection by micrococci, and we find the minute capillaries stuffed with these all over the body. In tropical dysentery the intestinal walls are full of them, and they are abundant in puerperal fever, hospital gangrene, and ulcerative endocarditis.

Bacteria are vegetables, and were first seen by Leewenhoeck in 1675, and their discovery and study has dug the grave of "spontaneous generation." They abound near the earth in the air, but Tyndal found them absent from the higher Alpine summits, showing that they are drawn down by gravity.

They may be collected by drawing air through cotton-wool which allows air to pass, but stops these germs; other methods are also used. Pasteur and Tyndall have proven that liquid exposed to air which has been filtered from bacteria never *putrefies*. If you admit germs for *one instant*, the fluid putrefies in a few hours.

All dust is full of the spores of bacteria, and they are even found in distilled water, being so small as to pass through sixteen supposed layers of filter paper. These spores resist drying for a long time, some for many years, as will be shown later.

In studying bacteria, we plant them in suitable "culture" materials, and grow them at our leisure. There are many such; perhaps the best is blood serum, coagulated and sterilized by heat. In using this method we place a few drops of the medium on a microscope slide, $\frac{3}{4}$ inch, inoculate it by fire, heating a platinum needle to redness, and thus sterilize it. Then dip the needle in the fluid whose bacteria you desire to "grow," and draw the needle, now infected, across the

"culture serum" on the glass. In a few hours the track of the needle will be covered with colonies of young bacilli, grown from the scattered germs left by the infected needle. Just as we propagate bacterial germs to identify them by the characteristics they exhibit when in their perfect growth.

Unless in large colonies bacteria are invisible, as a rule, owing to their minute size and transparency, and one of the greatest discoveries of medical science has been that these growths are susceptible of staining, and may thus be rendered very visible, as well as the fact that various forms of them stain different ways, and may thus be distinguished.

In 1880, Pasteur found that these disease-germs can be weakened by certain processes, so that the attenuated virus may be used as an "inoculation" to prevent the stronger disease, just as vaccine-lymph protects from small-pox ! He found that if he cultivated the "chicken cholera" bacillus, and put more than two months between each cultivation, the virus became more and more weak, and at last innocuous. This weak cultivation he uses for protection, and has done so very successfully in the case above named, as well as in the anthrax and hydrophobia, and it is almost certain that in the near future we shall be using "protective inoculation" for scarlatina, diphtheria, and other zymotic diseases. "Anthrax" used to kill a *million and a half dollars' worth of sheep* every year in France alone. Pasteur can save all these by his discovery.

Among the most important diseases due to bacilli is anthrax, or "malignant pustule," also known as "wool-sorters' disease."

The ancients knew this disease, which is so malignant that sheep which feed in a pasture, *over the graves* of animals dead of this disease, will infallibly die of it in a few days.

People who handle the hides or hair and wool of animals are most affected. Bone-dust used as manure has been known to infect human beings, as the spores are of almost incredible endurance in resisting destructive agents, age seeming in nowise to impair their virulence. Dr. Sternberg, U. S. A., finds them perfectly active after eleven years; even five *months'* sojourn in alcohol having a *tonic* effect on them, rather than the contrary. When introduced into the body, they grow with enormous rapidity, and live on the oxygen of the blood, hence death results from asphyxia, with dyspnoea, cyanosis, and low temperature. This is a curious exception to the rule that vegetables usually live in carbonic acid and exhale oxygen. After death the capillaries are found stuffed with solid masses of the bacilli, in numbers almost infinite, their rapid reproduction causing them to consume oxygen faster than it can be introduced into the body.

Erysipelas appears to be due to a microbe which is inoculable in

rabbits, and produces in them the same disease. The organism is found in all cases of erysipelas. Scarlet fever is, as yet, *sub judice*, but, like erysipelas, peculiar bacilli seem always to be present, and have been successfully used to convey the disease to animals. In diphtheria abundant micrococci are always found, and have been inoculated in fowls with resulting pharyngeal and tracheal exudations; the animals meanwhile being very ill. Fowls have long been observed to be subject to a diphtheroid disease, often present in them during epidemics of diphtheria.

In glanders a bacillus is present, which causes the disease in horses in inoculation, and this organism is found also in acquired cases in men.

Hydrophobia, that much-dreaded disease, has been shorn of much of its terrors by Pasteur, and he has successfully attenuated its virus, and protected thereby the lower animals. Of one hundred dogs he inoculated fifty, and shortly after infected the whole with virus from a case of rabies. His fifty "protected" dogs all remained well; the other fifty *all had rabies*.

In pneumonia abundant micrococci exist, and their inoculation, or even presence in the air, caused the disease, an acute lobar pneumonia, in animals, the lungs swarming with the organisms.

In typhoid fever we find a peculiar bacillus, but as none of the lower animals are subject to this disease it has not been artificially produced.

In leprosy, the "bacillus lepræ" is well known, and is used to make the diagnosis; but, for a similar reason, the disease has not yet been distinctly inoculated.

In relapsing fever the "spiro-chæte Obermeieri" is found, a very curious "cork-screw-shaped" spiral thread-like bacillus, which always is found in the blood during the fever, but disappears during the remission. They produce in monkeys genuine relapsing fever, and are found in their blood in immense numbers. The "bacillus malarie" is still in doubt, and deserves at present no extended mention here.

Very great interest attaches to the "bacillus tuberculosis," which is so constantly presented that it is used as a means of differentiating the *inflammatory* diseases of the lungs from *tuberculosis*. This organism *always* produces the disease when inoculated into animals. Statistics have lately been published showing that the bacillus was present in 2417 out of 2509 cases of supposed tuberculosis and as it is found in very small and infrequent numbers in *some* cases, it is probable that it was really present sometimes when over looked, as it is small and the straining is not always well done.

There are several forms of lesions long considered to be tuberculous, as cheesy glands and the like, and in many of these the bacillus

has been found, proving what surgeons had suspected a long time, that these sluggish inflammatory foci may be the source of a general tubercular infection, and the practical moral is that sluggish, enlarged cervical glands ought never to be allowed to remain, as they are a source of danger. They have long been removed for cosmetic reasons, and wisely, as it now seems.

The cholera, or "comma" bacillus, is the sensation of the day, and as Koch has successfully inoculated it, producing in animals rapid death of cholera, the appearances, both ante and post mortem, being characteristic, it seems as if the true cause were found. As the subject is new, let us look for more light, and hope for the day when science can control these scourges of our race as she now does small-pox.—*New York Academy of Anthropology.*

The Bishop and the Dentist.—A young country dentist was recently favored with a commission to make and fit a complete set of teeth for the Anglican bishop of the diocese in which he resided. The dentist was very anxious about the result of his labor, and watched his lordship examining himself and his new teeth in the pier-glass. His chagrin may be imagined when he heard the bishop give expression to language ending with the fearful word, "damnation." He ventured to suggest that his lordship might feel them rather uncomfortable at first, but in a little time he would get used to them. Without appearing to notice the dentist, his lordship exclaimed, with vehemence, "Without doubt he shall perish everlastingly."—"But indeed, my lord, if you will but have patience," pleaded the dentist, "in a week's time or so—"—"What do you mean?" inquired the prelate, turning round with an apostolic smile. "Why should I not have patience? The teeth fit me beautifully. It is the first time I have found myself able to pronounce the Athanasian creed with distinctness for these twenty years."—*Science News.*

A "Magnetic" Cure.—Dr. G. C. Harlan gives, in the *Philadelphia Medical News*, details of a case of cure by magnetism. The patient was of the usual hysterical type, and, having found great relief from the use of a magnet, was finally cured by applications of a piece of wood made into the same shape, but capped with iron so as to be cold to the touch. One-half the imaginary ailments of "nervous" people can be cured in a similar manner.—*Science News.*

To Fill Roots of Teeth.—Dr. L. S. Chilcott, of Bangor, Me., fits a piece of gutta-percha, then withdrawing it wets it in gutta-percha varnish and returns it. Sometimes a little of the varnish is also placed in the cavity before finally inserting the stick.

WORKING UNDER DIFFICULTIES.

A *contemporary* who has been an invalid for many years, and has prepared his dental journal under peculiar difficulties, even during his most comfortable days, says in a recent issue:

"This number of the *Journal* has been the most difficult to get out, as far as the editor's labors are concerned, of any during its brief existence. A hard fall on frozen gravel, breaking a rib, bruising and cutting the face, and severely jarring the brain, etc., succeeded in laying us on the shelf; and from this our work on this number has been done. We expect to do better with the next issue.

Let the following be a consolation :

HE KNOWETH BEST.

What if the way seems long and weary
Thy tired feet are forced to tread ?
Some day thou shalt look back with wonder,
And say, " My steps were gently led;
The way was short."

What if the rough stones wound thee sorely,
And to the pathway terrors lend ?
Turf soft and green thou wilt find only
When thou hast reached the journey's end,
Where thou shalt rest.

What if thou seest more of shadow
About thy path than sunshine's light ?
The days that are but gray and cloudy,
End sometimes with a radiance bright,
At sunset time.

What if the work be very heavy
Thou doest now with many fears ?
When all thy work slips from thy fingers,
Thine own shall say with falling tears:
" They were brave hands."

What if the things thou most desirest
Are given to those who prize them not ?
Perhaps some day thou shalt see clearly
That they would not have blessed thy lot.
He knoweth best.

WAX FOR BASE PLATES.

Melt all wax scraps and wax refuse in water, let it boil a few minutes; when *cold* take it from the pan and scrape from the bottom of the cake all the dark deposit, and thoroughly clean the pan. Again melt the wax, in clean water. Take a bottle with smooth sides, oil the outside and put *cold* water inside, and keep it cold. Dip the bottle in the wax and allow what adheres to harden; repeat as many times as required to make desired thickness, and then cut to proper size. Caution.—Don't let wax boil over. Remove from the fire when thoroughly heated. A little practice will show you what is best. A double boiler, an inner pan for the wax, and outer pan for water is the best for this purpose.—POPE.

PREPARING WAX FOR BASE PLATES.

Editor ITEMS OF INTEREST:

I use pure bees-wax, and a small amount of paraffine. Take a tin dish or basin, say ten inches in diameter and three inches deep, fill it *nearly full* of water, put in the wax and paraffine and set it on the stove. Heat till the wax and paraffine are melted, but *do not heat to boiling*—keep the heat to the melting point. Take a round, pint bottle, having a deep concave in the bottom; oil the bottle on the outside and fill it with ice cold water, and cork tight. Take hold of bottle by the neck in one hand and insert thumb, or first and second fingers, in concave of the bottom and dip the bottle in the wax and paraffine and rotate the bottle *continually* till the required thickness for base plates wanted has been deposited on the bottle, take a knife and cut the wax in four places lengthwise of the bottle, when it will readily come from the bottle, and can be pressed flat and cut in required sizes while warm.

SUNBURY, Pa

J. R. CRESSINGER.

DENTISTRY IN CALIFORNIA.

Editor ITEMS OF INTEREST:

Would it not be well to call the attention of those desiring to come to this State to engage in the practice of dentistry, that we now have a law, prohibiting any one engaging in the practice of that profession, who were not so engaged in this State at the time of the passage of the Act, March 12, 1885, without being subjected to an examination before the State Board of Dental Examiners, or filing with them a diploma from some reputable Dental College?

The reason for this suggests itself, from the fact that since such laws became operative in the eastern States, the "traveling dentist," the "circuit preacher," with his "kit of tools," the office boy of the gas offices, the "lightning tooth extractor" are all looking to this coast as a desirable place to prey on the credulities of the unsophisticated, where no man or law need make them afraid.

We have produced enough of this class in our own State to last for years. We have our dental parlors that have in times past charged the student twenty-five dollars for teaching him the profession, and graduated him in three months time as a full-fledged dentist. There is one institution of this kind at Santa Rosa, and several in San Francisco. We don't want any outsiders of the same stamp to come to California and increase the depredations of these scoundrels.

Respectfully, J. L. ASAY, M. D.

VISALIA, Cal., June 28th, 1885.

[We would reprint the list of States having dental laws and add

the later ones (Dakota, Delaware, California and Minnesota), but we fear making those States without laws (such as Connecticut, Maine, Massachusetts and others), so conspicuous that they would get all the tramps.—EDITOR ITEMS.]

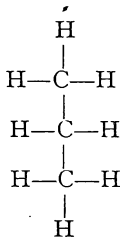
MARSH GAS, AND HOMOLOGOUS COMPOUNDS.

W. S. ELLIOTT, M.D., D.D.S., DANBURY, CONN.

(Concluded from page 326.)

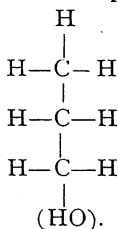
We have seen some of the prominent molecular structures as built on the *one* atom and *two* atom carbon nucleus. Other possibilities are apparent when the skeleton is enlarged and comes to possess a still greater valency. In the one carbon are four free bonds ; in the two there are six, and in three, eight. It is evident, therefore, that the successive addition of one C there must be two H, or their equivalent, to engage the open bonds, and it is this CH₂ that constitutes the common difference in this homologous series of compounds.

The tri-carbon nucleus, if saturated by hydrogen would constitute a propylic hydride—a combustible gas which is found, mixed with numerous other compounds of the same class, in our petroleum wells. In the series, of which this is the third, there are no less than *nine* which have been identified. The tri-carbon nucleus, if clothed as mentioned, will give us



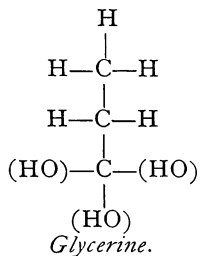
*Propane—Propylic hydrid—*a gas.

Here, as in the former cases, we must open one or more bonds, and after doing so we can make such substitutions as will satisfy the atomicity. Let us substitute the same hydroxyl radical, HO, for one H ; under such change there is produced

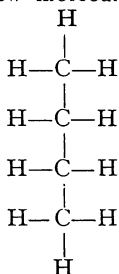


Propylic alcohol,

and by replacing two more H by the same HO we have our ordinary

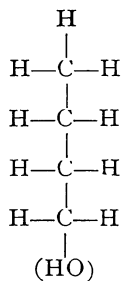


But, to avoid tediousness, we will exemplify only such substances as are more or less familiar to all. We will take the four carbon nucleus and construct still new molecules:



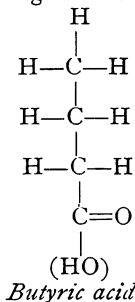
Butylic hydride, tetrane, or diethyl.

But we must stop short of complete saturation else there will be no room for any other element. Therefore let us drop one H and add HO, we again enter upon the homologous series of alcohols, and in this instance we have the

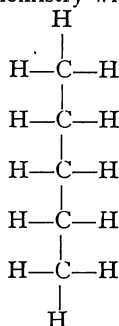


Butylic alcohol.

Again, change two of the H to one O, and the result is butyric acid, the product of fermenting butter:



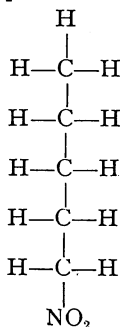
We now pass to the five carbon nucleus or amyl series. As such products are familiar, their chemistry will perhaps prove interesting:



Amylic hydride,—becomes a gas at 86° ,

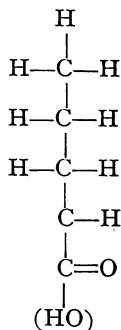
By striking off one H we render the rest of the molecule monatomic. Substitute HO, as before, and we produce amylic alcohol, or fusil oil. The common whiskies made from corn, potatoes, etc., yield a large percentage of this fusil oil.

Once more let us dress up our skeleton, and, as was the case in the ethylic compound, we introduce NO_2 , the nitric acid radical, and we will have that pungent liquid known as the



Nitrite of amyl.

If, instead of this, we add HO and O, then comes to us acid of valerian or



Valeric acid.

The next in the series would be *hexylic hydride*, then *heptylic*, *octylic* and *nonylic*. Hexylic vaporizes at 142° ; heptylic at 194° ; octylic at 247° , and nonylic at 303° .

The legal standard required for the density of our common kerosene is 112° to 114° . Kerosene is a mixture of amylic and hexylic hydrides, and since the one is vaporized at 86° and the other at 142° , the mean is taken as the required standard for a safe burning oil.

At this point we may refer to that class of compounds popularly known as fruit essences:

C_5	H_{11}	C_5	H_9	O_2	Apple.	} Oxides of radicals.
C_2	H_5	C_4	H_7	O_2	Pine-apple.	
C_2	H_5	C_7	H_{13}	O_2	Green gage.	
C_2	H_5	C_9	H_{17}	O_2	Quince.	
C_2	H_5	C_8	H_{12}	O_4	Mulberry.	
C	H_3	C_7	H_5	O_3	Wintergreen.	
Etc.						

These are all constructed upon the marsh-gas basis and contain only the elements CHO. It will be noticed that in the formulæ there appears, in every instance, a repetition of the symbols. This fact indicates that two different molecules are joined to the production of the one possessing the peculiarities noted. Apple oil is composed of the amylic radical and valeric acid. Wintergreen, of the methylic radical, and the septylic radical reclothed.

Among the sextylic, septylic, octylic and nonylic groups are the well-known substances:

C_6	H_5	(HO)	Carbolic acid.
C_8	H_{10}	O_2	Creasote.
C_6	H_{10}	O_5	Starch.
C_6	H_6	O_3	Pyrogallic acid.
C_6	H_{12}	O_6	Grape sugar.
C_4	H_{10}	O	Sulphuric ether.
C_6	H_6		Benzine.
C_7	H_8		Tolu.

Thus far we have made but incidental reference to the important element nitrogen as a constituent of organized bodies. Our inquiries have been directed toward those substances hitherto deemed only the results of organic life, but which are now reproduced in the chemical laboratory. Nitrogen pervades both animal and vegetable bodies but is most abundant in the former and is an absolute requisite to growth and nutrition. It is termed the life generator, but will not sustain life. From the atmosphere it is drawn to enter into combination with the highest forms of coporeal vitality. The mode of combination is very indirect and its affinities are exceedingly delicate; hence, the marked instability of the nitrogenous compounds. All the powers of nature cannot compel it to join with—for instance—oxygen. It is self-willed and must be coaxed directly into obedience. But so inconstant

are the compounds that disintegration ensues upon the slightest disturbing influence. Gun-cotton, gun-powder, nitro-glycerine and such explosives are nitrogenous compounds. Vegetable and animal tissues are peculiarly prone to succumb to forces which control them in their chemical aspects.

But we cannot appreciate fully the powers of carbon in the functioning process except as we include nitrogen in the role of activities; nor will we know of the possibilities of therapeutics except as we understand their chemical relations to the necessities of physiological requirement.

Nitrogen occurs in animal tissue in the proportion of about fifteen per cent. It is a necessity of our food; we could not subsist upon aliments that contain no nitrogen, such as sugar, starch, gum, etc. It will be observed that the unnitrogenized substances of which we have spoken do not enter largely into our armament of medical agents. Mineral salts and such medicaments exert their influence as antagonists rather than in a way to associate with normal physiological process. We have learned to recognize the great value of the vegetable alkaloids. These are nitrogenous bodies and, as will be seen, are highly complicated in their structure, for example:

C_{30}	H_{47}	NO_7		Aconitine.
C_{17}	H_{23}	NO_3		Atropine.
C_{32}	H_{52}	N_2	O_3	Veratrine.
C_{21}	H_{22}	N_2	O_2	Strychnine.
C_{20}	H_{24}	N_2	O_2	Quinine.
C_{17}	H_{19}	NO_3	H_2	Morphine.

All these are built upon the carbon basis, as shown, and our object is accomplished if we have made this clear, and if we have exemplified in any intelligent manner the great scheme of organic life in anything like its fullness. The field, even to those who are experts in chemical science, is an immense one and is spread before the intellectual vision on every side, beyond, and to the place where the sky bends down to limit the boundary of knowledge, and behind which lies the unknown and the unknowable.

The proper treatment of the teeth of children requires a nice judgment and a full knowledge of the processes of nutrition and growth. Indiscriminate extraction may lead to unsightly deformities and to premature loss by decay, or the entire uselessness by displacement. It becomes every one, therefore, to seek the best advice in a matter so important that pain may be averted and the health of the little ones be conserved.—S. W. ELLIOTT.

Speak as little evil of a competitor as possible; but be quite ready to do him a good turn, or say some kind thing of him.

CLASP PLATES VS. BRIDGE-WORK.

DR. L. P. HASKELL, CHICAGO.*

Of all the frauds perpetrated in dental practice, those under the name of "bridge-work" are the worst. Thousands of sound teeth are being ruined by this effort to hold artificial teeth in the mouth "without a plate."

The system is unnecessary. A narrow, nicely-fitting gold plate is not in the way and does no harm. It can be secured by clasps to the same teeth the bridge-work is secured to, and made just as useful. Nicely fitting clasps, kept clean, do no harm to the natural teeth and the plate can be removed at will for cleansing. On the other hand, in bridge-work, the tooth which is enclosed in the gold band is gradually sacrificed by decay, and by constant loosening. In course of time the cement with which the band is finally attached will disintegrate, allowing the secretions to work in, and thus girdle the tooth by decay. The action of mastication on artificial teeth *thus* fastened on natural teeth, eventually loosens them. Also, where these dentures come in contact with the gums, plate or no plate (and I have often seen a considerable width of plate), it is impossible to clean them; they become simply a mess of nastiness from which any sensible person would recoil. I know whereof I affirm, not only from the very nature of things, but by my experience when removing them from the mouths of patients. I have no difficulty at such times of demonstrating to the wearer the mischief the thing was doing and its foulness.

Of course, the patient at first is *delighted with the work*. "It is so firm, I can crack nuts with it—never loosens—no trouble!" They little dream what is in store for them. When the teeth, to which the bridge is attached, becomes loose, and the patient is compelled to, resort to a large suction plate, they see their folly. If, instead of this they had, in the first place, resorted to a properly constructed clasp plate, they might have retained those natural teeth for a life time.

Separating teeth, Dr. Clowes, of New York, thinks is one of the greatest safeguards against caries. He says: "Where the teeth naturally stand apart there is no decay, but when so close together as to hold food they are always in danger of decay. When a young operator we *thought* separation good practice; now, as an old operator, we know it to be so." We agree with him.

Replanting.—Dr. H. M. Ragan, of Bath, Me., was recently successful in replanting two front teeth that had been knocked out by an accident.

*DR. HASKELL is probably one of the best plate workmen in the United States.—ED.

WHY ARE NOT ALL TEETH INVULNERABLE ?

J. SMITH DODGE, JR., M.D., D.D.S., NEW YORK.

I believe the answer will be found in the relations of the teeth to the nervous system.

The nervous supply of the teeth is very large, embracing the root through the pulp and periosteum in a copious and elaborate network, and their connection with the nervous centers is immediate and important. Supplied so freely by the fifth pair, the teeth are by it most intimately connected with the pneumogastric and the sympathetic chain, and thus with the nerve-centers governing every vital organ. It is well known how variously disease of dental pulp or periosteum can play on these thousand strings, and what perplexing trouble it can cause in organs the most remote. But it is not so well understood that the current may flow the other way, and trouble of the teeth which though to the sense seems wholly local, may be only the local report of a distant disturbance. I do not specially mean those sympathetic toothaches which occasionally occur without fault of the tooth, but I wish to express the opinion that the integrity of teeth depends largely on the trophic function of its nerves, and that this function is readily disordered by abnormal impulses, or the failure of normal impulses, from the nerve-centers; of which the result is incapacity in the tooth to resist the destructive agencies that surround it. Let us consider this trophic function:

If you incautiously cut into the pulp of an adult's tooth, the response will be instantaneous and forcible; and yet that nervous trunk has been there thirty years, perhaps, and never till this moment had occasion to report an injury. What has the nerve been doing those thirty years? Something, or it would not be so ready now. An eye kept thirty years in darkness would not respond so perfectly to the first beam of light. A muscle unmoved for thirty years would be incapable of motion. There must be, then, some function proper to this nerve which it has all this time performed, and that function is to keep the tooth alive.

When nature undertakes to garnish the highly organized and vascular jaw with a row of mill-stones, and to hold such dissimilar parts in harmony, she takes up a difficult task, in which the one condition is to keep the teeth alive. For this are all the multitude of nerve filaments which, within and without, surround the dentine of the root, and pour, we cannot doubt, a constant stream of vitality through the dentinal fibrils, and, if you will, through the reticulum of Heitzmann. This is the controlling force which presides over the development of dentine; which sustains its living condition and gradually increases its density; which fights within it against the encroachment of decay, forming a limitizing zone to retard its progress, and which,

exhausted and withdrawn, sometimes leaves the tooth in old age a prey to the most rapid destruction. Now, it is the special purpose of this paper to emphasize my fixed conviction that the ravages of decay in the teeth of children (and the same is true of many adults) are due to defective structure of those teeth, and that this defect of structure results from greater or less failure of the nerve-centers to perform on the teeth, growing or grown, their trophic function.

Nor is this a longer way of saying what has been so often said before, that unhealthy mothers bring forth unhealthy babes who grow poor teeth. I am trying to put a finger more precisely on the seat of trouble, which has been hitherto but vaguely guessed at. For instance, the opinion widely prevails that rapidly decaying teeth are such because they have not lime-salts enough. Is that true? I do not remember any researches which prove that these poor teeth have any less earthy matter than those which last seventy years. They are soft, indeed, when cut, but that proves nothing. We call them "chalky," and the name is good. Is chalk, then, wanting in lime-salts? It may be they lack lime, but I believe it a venerable and unfounded assumption. Still, letting the old assumption stand, *why* have they not lime-salts enough? Enough has been found to make forty pounds or more of bony skeleton; why not a few grains for the teeth? Is it not more reasonable to talk of a defect of combination than of supply? And who has not seen under the microscope how faulty the structure of these teeth is? Whether, therefore, the proportion of lime be normal or abnormal, the true failure of such dentine does not so much concern the quantity as the adjustment of materials. The fact is, we talk too much of the earthy and the animal parts of dentine, as if they were two things. Dentine consists of *all* the elements given in the chemist's analysis. Take away a part, and you have no longer dentine. When the dentine is perfect, the phosphate of lime is just as much alive as the albuminoid portion, and we should think and talk, not of the parts into which it may be separated by destroying it, but of *dentine*. By all this I mean to urge the consideration that it is not the excess or lack of this or that constituent which makes the trouble, but that the tissue is badly put together. As Mr. Durham writes of a similar condition in bones: "In healthy bone the constituents are combined; in diseased bone they seem rather to be mixed." Just as epithelium or brain, while chemically much the same, may be of high quality or low, so dentine, formed under healthy innervation, will be one thing, while with trouble at the nerve-centers it will be functionally quite different, though neither test-tube nor microscope can fully account for the difference. And here, lest I seem to present a merely personal and unsupported fancy, let me refer to authorities on analogous diseases of bone.

There are two diseases of the general bony system which variably resemble the dental condition before us,—rickets in infancy, and the rare disease of adult life osteomalacia. Of osteomalacia Mr. Durham writes, as quoted in Bryant's Surgery, "It is to be regarded as a particular expression, as it were, of a general morbid condition of the system, rather than as a special disease of the bones themselves." And Bryant adds, "Its cause is wrapped in obscurity. It chiefly attacks subjects who from some cause have been subjected to prolonged depressing influences, more particularly on the nervous system." Of rickets Dr. Bartholow writes, "Certainly bodily states of the parents may exert a very baleful influence on the constitutions of their offspring, of which rickets may be regarded as an example. An innate tendency to rickets is a result of marriages of consanguinity, or of those too old, or of the feeble and cachectic. * * * All the causes of every kind which depress the bodily powers of the mother increase the tendency to the production of rickety children." And a final quotation from Dr. Fothergill's admirable work on "Indigestion and Biliousness" may bring us back to our theme. This high authority says, "There is much pointing in the direction that the pace at which we live nowadays is exercising a persisting effect on the digestive organs of a deteriorating character. The dental caries so prevalent, indeed universal, at the present day is but a part of the general, widespread failure of the digestive organs. * * * Whence comes the profound modification of the organic processes, the commissariat of the active or animal part of the body? It is the effect of modern life on the nervous system."

It is evident from these quotations that analogous conditions of the cones are coming to be regarded by the best authorities as expressions of general nervous depression, and that the same authorities incline to the opinion which I am urging, that the teeth are similarly influenced.—[Trans. Odontological Society, of New York, in *Cosmos*.]

Civilization and the Teeth.—Civilization, with its inevitable concomitants of luxury, etc., has led to inherited weakness of tooth-structure. It has also taught us the use of agencies to resist such encroachments. Among these primarily is every-day systematic cleanliness, the removal by the simple means at every one's hands of these accretions which assist most assuredly and powerfully by chemical change in the decay of tooth-substance.—D. NEAL.

T. R. Wilson, D.D. S., of Winfield, L. I., writes us: "I like your ITEMS OF INTEREST well. It does not contain so many essays on the incomprehensibility of the little end of nothing that some of our journals do."

SEPARATION OF TEETH.

J. W. CLOWES, D.D.S., NEW YORK.

"Oh, doctor, what a great thing you did for me thirty-five years ago when you *separated my teeth*. Had you not done so then, I verily believe there would be no teeth in my mouth to-day."

That was my patient's declaration, and this is my reply: I can hardly tell how happy I am at this expression of your approval; for while I performed that work you were shaking in your shoes from fear, and saying in your mind, "*If he should ruin my teeth, what should I do!*" And now, after all those years, to have the testimony that has come through your experience, I may well feel proud that my practice of that early time was founded on the right. Before you, your parents had been patients of mine, and though their needs were principally artificial, your mother still retains every tooth and vestige of a tooth that I found in her mouth on our first acquaintance. After your marriage your husband's teeth came under my care, and for more than a quarter of a century his faith in the work of my hands has been as unswerving as those military lines he has so often led where patriotism and duty called. During those years a little band has sprung up in your own household, which, when from time to time they have come to my office, we have facetiously called the "junior regiment for inspection." Under your command these family troops have trained well, and *there is nothing more beautiful in the province of dentistry than the results which have come to pass in their mouths by dental culture*. Their dentures are full without forcing; their contacts light and positions erect. Approximal cavities have no place there. The wisdom teeth are good in shape and substance, and *heredity itself has been overcome*. What should we think of a physician who could set aside inherited tendencies to disease? What we may not even *think* of in medicine we may *declare* of dental science,—and thank God for! An emphatic expression was once given at a society meeting by one of my professional brethren in these remarkable words:

"Mr. President, I wish to denounce this practice of separating teeth, this cutting away of their dentine and enamel, this wanton waste of their substance and strength. Having heard so much said on this subject, I was induced to separate several of my patients' teeth; but after a little while every one of them came back and begged me to restore what I had taken away, for I had made them miserable by reason of the annoyances to which they were subjected. I have had some separating done to my own teeth, with the same result as to my patients', and never was more happy in my life than when their natural contours were restored by building them up with gold."

What separation could do for him—what it had done for them—was thus graphically shown. It left no room for doubt that the prac-

tice was bad. As this denunciation had come from the practical tests and experiences of one high in authority, the juniors of the profession readily fell into line and declared their readiness to "let the Almighty's work alone." They did not propose to lend a hand at anything like innovation. Perfection in the shape and position of the teeth had been reached, and they were content. *Under this reasoning the vine would go unpruned, and helpless infancy find no protection in the world!* I should have stood alone, on that memorable occasion, had not one venerable friend, stirred by compassion for my forlorn condition, given me aid and comfort. "I have," said he, "been told that the South Sea Islanders file their teeth to shapes resembling those of a saw, and as yet no evidence has been given of damage from that cause." With only this feeble plea to cheer me on, I ventured, in my extremity, to ask information on a single point. By inference from what has been said regarding the hurtfulness of separating teeth, it might well be credited that a continuous procession of complaints, in woeful plight, must be coming to my office and demanding relief. *No man, woman, or child has thus far come to make such a demand or to enter a complaint.* What are we to think of this, and how shall it be explained? A gentleman answers (*sotto voce*), "Your patients think so much of you that they do not want to let you know." This pleased me well, and scored a victory for the right. My patients are ready enough to report the slightest twinge of pain, and if from any cause they hesitate awhile, my admonition, "in no wise to suffer but come back at once for relief," cannot escape their memories.—*Cosmos*.

Plaster for Impressions.—An experience of a quarter of a century in the use of plaster has confirmed the opinion that there is nothing equal to it for accuracy in the whole range of material at our command. In the majority of cases, wax, the "modeling composition," or even gutta-percha may be used with good results; but they fail, or have failed in my experience, just where we most need perfection in a class of mouths with yielding tissue. By the use of partially unyielding material, the soft tissue is pressed out of position, which acts on the plate, subsequently inserted, as a spring, causing it to drop. The insertion of plaster in a semi-fluid condition meets this difficulty, and we have a correct impression, with the least possible change in the tissues. Where it is unnecessary to use the plaster in hard mouths, I much prefer the "modeling composition," and, in practice abroad, made use of this material almost to the exclusion of plaster, in the cases just cited. Wax, in my judgment, occupies the lowest place in impression materials.—JAMES TRUMAN.

Celluline, found at most places where celluloid cuffs and collars are sold, will restore to whiteness the yellow color produced by wear.

HOW DO WE GROW ?

So far as the microscope reveals the nature of the physical and chemical activities involved in the process of growth, we learn that it is a play of affinities which corresponds with molecular motion throughout organic nature. The single cell in which life begins as it is excited by the fecundating principle, presents a scene of activities corresponding with those observable in a hive of bees during the season when the highest supply of food is furnished by expanding buds and flowers. The vegetable cell affords some distinguishing features in which chlorophyl, the green coloring principle, plays an important part, but, as a whole, chemical action is the same. Each cell has a nucleus or central point of life, and around it the molecules of matter are in ceaseless motion. The cell material is organized matter in a highly excited state, and the work carried on is confined to building cell walls and laying the foundation for new cell structures. One cell organism rises on another in the solid parts, and in liquids the cells float about and perform their functions in an unstable condition. Growth in liquids and solids is by the multiplication of infinitesimal cells, and the material is supplied by the nutriment received into the digestive organs.

When we consider the complexity of the various organs,—the nervous and muscular tissues, the blood, the secretions, the brain, the nails, the bones of the body, and are assured that all comes from similar food material, and from the oxygen of the air, it conveys profound impressions of mystery. There is in the contents of the hen's egg every material needed to build the structure of the chick, consisting of bones, feathers, bill, feet, eyes—all there is of the little organism.

The period of growth—that during which increase of mass goes forward—in man, is confined to the first fifteen or twenty years of his existence.

During this period the necessary waste of tissue, and construction and repair go on simultaneously, necessitating a larger supply of material than is needed at other epochs in life. During cell growth, the contour of form is preserved, and uniformity of increase is maintained. One limb, one ear, or one bone, does not grow faster than another; the blood is the grand carrier of material and it circulates everywhere. The little molecules crowd and push their way into the minutest tubes of every part of the growing child, and bring along the carbon, nitrogen, oxygen, lime, and other material needed, and the cells are built and multiply till the mature form of man is perfected.

In the process of growth and in the supply of waste material in the body, we have to study the evolutions and chemical changes of matter, and in material man we have nothing but matter to consider.—J. R. NICHOLS.

HOW ARE THE TEETH FED ?

Dr. Atkinson says : "I have been pained, as others have, at the drivelling idiocy of feeding lime-rocks to mothers, and hearing it advocated by men who ought to have known better. We must remember there is another side of the question. Lime is necessary, and those who have had charge of menageries have found it out to their cost. They could not produce perfect lions in confinement till they learned that they required not only a daily flesh diet, but bones also. Had they been able to obtain their own food, which they could not do in captivity, they doubtless would have had a sufficient supply of lime-salts for the purpose of reproduction. But I am so glad to have it plainly stated that it is the operation of the radiancy and the churnings in the digestory process that elaborates the pabulum of which the tissues are built through the circulation, and that it is the function that has been spoken of as trophic nerve energy that does the work. That trophic nerve energy was referred to as the act of the parents. There I would enter a caveat, just the same as I would when a learned physiologist tells me the liver secretes bile. I would say bile is secreted in the liver, and that through the mechanism of the parents the confluence of plus and minus energies did produce the germ ; but that the parents did it in any adequate sense, intellectually or consciously, I have not the remotest idea. There is a divinity that shapes our ends ; there is something in the atmosphere that makes for righteousness ; and if we could learn from the gymnasts the profitable part of their lesson it would be well for us. I think it is our over-acting in some directions and under-acting in others that disturbs the inhibition of the radiancy from the sun, and irradiancy from inhabitation of planets, or that which has been called trophic energy in the human system, which operates all the functions of the body, as well as what we call mental operations, referred to the brain.—*Cosmos*.

In the use of filling materials, Dr. Guilford says he can never identify himself with either party of extremists ; he has always been conservative in his feelings. At the same time he is willing to believe both parties will accomplish good in their respective ways ; the one by inviting to greater care and skill in the use of gold, the other by leading to improvement in the preparation and manipulation of the various plastics.

I teach my patients that the showing of gold in the mouth is a sign of care taken, and an indication of refinement. I favor artificial crowns in front teeth where they have been broken and the pulp destroyed, and believe the "Bonwill" crown is the crown of the future. In setting artificial crowns with metallic pivots, I prefer gutta-percha to any of the zinc preparations.—*AMBLER TEES*.

INFLUENCE OF THE NERVES ON THE TEETH.

Dr. N. W. Kingsley, of New York, says: "Four years ago, before the International Medical Congress, in London, in a paper which I called 'Civilization in its Relations to the Decay of the Teeth,' I said I believed the causes of decay were always surrounding the teeth; that the difference between teeth in their liability to decay, or in their succumbing to such causes, lay in their unequal resisting power, and that the resisting power was back in the nerve-centers; that the cause of the trouble was largely not local, but an inability to resist local manifestations. Those ideas were neither entirely novel nor entirely original with me. The same had been suggested, in different forms, by Professor Anstie, of London, who died many years ago, and also, before him, by Mr. Mummery, of London, in some statistics which he had collated in relation to the decay of teeth in civilized and uncivilized races. In reference to the question of civilization, the reason I called the paper by that title was that I had frequently heard it said that the cause of decay in teeth was inherent in our civilization; but it is not necessarily a result of civilization that our teeth are decaying, or that our nerve-centers have not the power to resist the causes of decay that surround the teeth. It is the abuse of civilization and nothing which civilization can be held accountable for. The community is recognizing the causes of faulty teeth, they are improving on their condition, and the day is coming when we may have all of the benefits accruing from civilization we possess to-day, and yet have learned to resist those deleterious influences which have heretofore led to the destruction of our teeth. The decay of teeth, I am satisfied, will grow less and less, while we retain our mental and physical strength, or even grow intellectually stronger, for we shall learn the secret of their preservation.—*Cosmos*.

Taking Impressions.—Dr. W. H. Trueman says: I desire to call attention to the use of oxy-phosphate cement for taking the impression of roots, where extreme accuracy is required as in some processes of pivoting. I have adopted the use of metallic pivots almost exclusively, and lately have set a number, by first fitting a cap tightly over the root on which I set the tooth. The idea is borrowed from Dr. Richmond's arrangement of bicuspid and molars, and in small or weak roots I think it will give greater security, and prevent them splitting. It has the advantage of not having a band of gold show conspicuously. In these arrangements extreme accuracy is essential. This I have secured by fitting a gold ring accurately to the root, and after adjusting the gold pivot to its place, packing between the ring and the pivot oxy-phosphate cement, first oiling the root. This sets quickly, and firmly holds the ring and pivot in place while it is being removed from

the mouth. In one case I desired an accurate impression of a root and a cast of it, that would bear more rough usage than plaster; this I obtained by packing the impression of the root with amalgam and allowing it to stand over night, and then completing the cast with plaster. I very much prefer plaster to wax for taking impressions, and only use wax round the teeth in partial cases. Still, I know a dentist who always takes the impression of partial cases in wax, and very rarely indeed makes misfit. He takes the impression in the ordinary way, removes it before it has become hard, and after trimming off all surplus wax, replaces it in the mouth. I have tried the same plan, but utterly failed. In such cases I take the impression of the teeth in wax, and the roof of the mouth, in one impression. In soft mouths I use the plaster very soft, my idea being to get an impression of the mouth in its normal condition, and to carve the cast where I desire the plate to press harder, rather than use a material that will press on the soft parts. In this, as in a great many other things, success is more due to *practice* and *judgment*, than to the material and method we use.

The Kind of Preparation we Need.—While I would not disparage the growing necessity for a higher medical knowledge, I would not underestimate the *greater* need for the education of future dentists, in the highest mechanical sense, as experts; not in theory, but the hands and eyes should be developed to the keenest perception of what to do and how to do it. If I had to give up either, I would cling to the mechanics of my nature and attend the best schools where my hands could be taught to do not only what others had demonstrated, but what my own brain had conceived. Without this, all our boasted medico-dental education is in vain; except in treating the diseases of the head and face. Unless this branch is more zealously cultivated and elevated, dentistry will continue to be a failure and will never fulfil its high mission. It must be made of men who are intended by nature for it; who have a holy inspiration; and not of those who were intended for merchants, farmers, bankers, and smiths. When the schools shall demand of their matriculants a preliminary examination as artisans, not in theory, but in actual demonstration, that they are capable of performing, with credit, some mechanical achievement, then a medical training will come in very well; but not unless the former is first well engrafted.—W. G. A. BONWILL.

A German dentist, practicing in Southern Germany, once remarked: "Yes! yes! the Germans have it *here* (pointing to his forehead), and the Americans have it *here* (working his fingers in the air).

THE ATMOSPHERE OF THE LOOKING-GLASS.

Editor ITEMS OF INTEREST :

I seize the effective instrument of the editor and clip the following from the *Popular Science News*, as bearing on the poisonous effects of amalgam fillings; and it may also account for the fact that ladies are more liable to such poisoning than men.

Yours cordially,

C. R. TAYLOR.

DEATH IN THE LOOKING-GLASS.—A facetious contemporary says: "A German physician, one Dr. Neukirch, reports having met with several chronic cases of mercurial poison. In two cases at least, that of a man and his wife, the cause was traced directly to a looking-glass in their bedroom, the wooden back of which was dotted all over with thousands of minute globules of mercury. The apartment was heated during the night. In another instance the source of the poisoning was a mirror forty years old, whose back had become weak, and from whose face the quicksilver freshness was fading. The aged culprit having been summarily removed, their victims speedily recovered. Thus has yet another of our trusted friends been proved false! And now we must either destroy our mirrors while they are yet young and innocent, or else keep a watchful eye on them, and brace up their backs the moment the sign of decrepitude becomes apparent. If worse comes to worst, we can at least take refuge in the burnished steel of our forefathers.

EDITORIAL REMARKS.

Our friend Taylor is death on amalgam. The above looks a little far-fetched, as an argument, and a *little* doubtful, as a fact. Yet it is, perhaps, well to consider the subject from all possible stand-points.

The atmosphere of the looking glass (the caption is mine) reminds me just a trifle of the power of the aroma of fox-grape wine as presented once by a homœopathic physician.

"Doctor," said he, entering my office one day, "just smell that."

"Ah, yes;" said I, "it has a beautiful aroma."

"Yes," said he, "that is a wine of fox-grapes, and this aroma you smell is the medical property of the wine I am after. It is a specific for a prevalent disease."

"How will you prepare it?"

"By reducing it to the fifteenth trituration, and moistening pellets with the medicated fluid thus obtained. Three of these pellets three times a day will be a specific. Perhaps some will not be able to bear even that strength."

"To obtain this dilution of your wine, doctor, how much water would you have to add to this half-pint of wine?"

"O, I don't know; that is not the way we do it, you know."

"Yes, I know how you do it; but, I say, suppose instead of di-

luting a single drop, you take the half pint at once, how much water would it require, that your medicated water, or rather, that this aroma, may be equal to the fifteenth dilutation?"

"I never estimated it, but it would take a great deal."

"Would you not have to dilute it in a thousand barrels of water?"

"I guess not as much as that, but it would be a great deal."

"Why doctor," said I, "it would take more than a million barrels of water. Let us calculate—"

"No, it would take too long."

"But doctor, to put this half-pint of wine in a million barrels of water would not dilute it nearly enough to make it of the weakness of the fifteenth trituration. That little half-pint of wine would have to be poured into all the water of Lake Ontario—and then it would not be weak enough? And, in the name of common sense, what would be the power of these pellets moistened with the waters of Lake Ontario into which had been thrown this half-pint wine! And remember, too, it is not the wine in Lake Ontario you are after but its *aroma*!"

The Sphere of Dentistry.—Several years since a pharmaceutical student, viewing the rapid approach of examination day with apprehension, and lamenting the numerous difficult studies he was required to master, said to a student of mine, "I am sorry now I took up pharmacy instead of dentistry, for all a dentist has to learn is about the teeth and gums."

This may seem absurd, but his opinion of the attainments of the profession is shared by the laity, humiliating though it be; and yet when we consider the caliber and qualifications of some of our brethren, we cannot blame them much. The teeth and the gums may seem a small matter, but when we consider the number of individuals whose daily occupation is the care of these organs, it is evident they are important parts of the human economy. That this regard for them is not of recent origin is shown by the sayings of several old writers, among whom is Cervantes, who says "I had rather they had torn off an arm, provided it were not the sword arm; for thou must know, Sancho, that a mouth without teeth is like a mill without a stone, and that a diamond is not so precious as a tooth." But that, however, was before the advent of those good Samaritans who make a brand new set of teeth for \$5, no charge for extracting. Now gentlemen when we consider the amount of literature that has been, and is being published on this subject, it would seem about all that was possible to say had been said, and anything further would in all likelihood be a rehash of facts. So that you need not be surprised if what I may say is not new to you.—W. D. KEMPTON.

PYORRHEA ALVEOLARIS.

Dr. S. H. King, of Lincoln, Neb., by arrangements made in April, sent us May 2d last, a good article on this subject, but because of the unavoidable delay in perfecting the cuts, he does not now wish his essay to appear. He certainly shows intelligence on this disease, and we shall be pleased to hear from him again, when he has any thing to say on this important subject.

With pleasure we give space to a portion, with the cuts of the instruments we have prepared. He says:

Occasionally other types of diseased gum-tissue come under the observation of the dental practitioner which may be expressed by the general term peridontitis. Among these, two may be more definitely classed as scorbutis, and pyalism or mercurial salivation. While these may be attended with severe inflammation, they seldom reach the point of suppuration, and I think it may be safely said—by excepting mariner's scurvy—they never reach that chronic condition which would properly characterize them as pyorrhea alveolaris, unless they also be accompanied by salivary deposit.

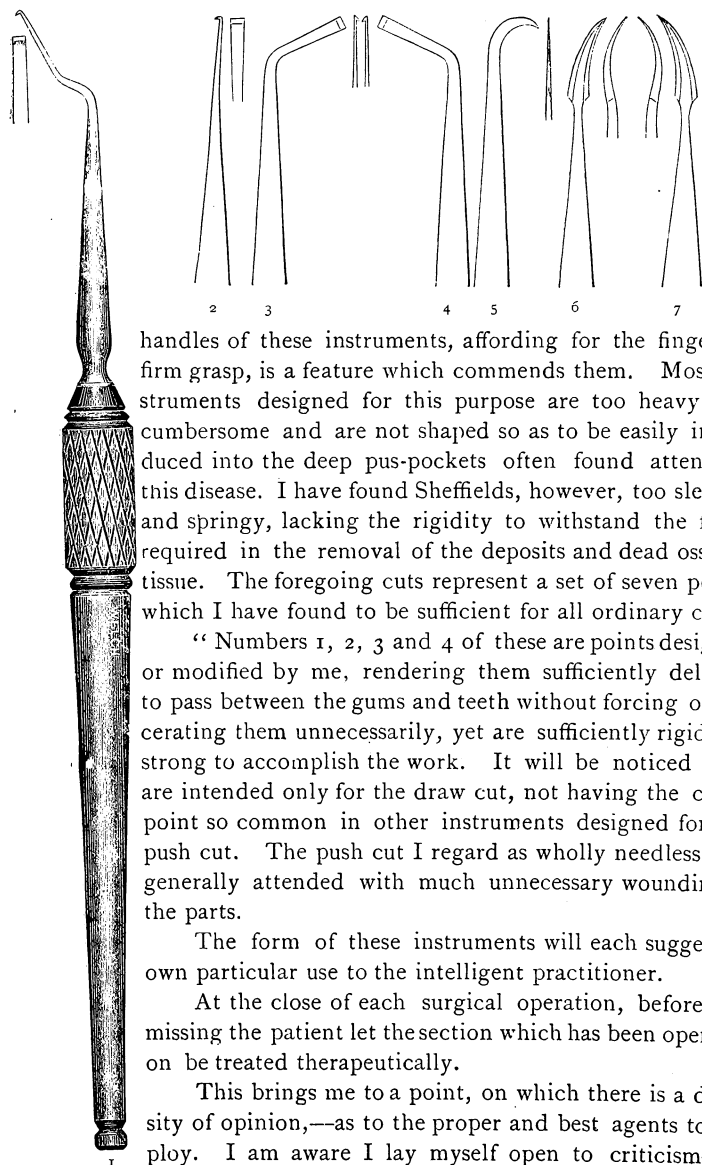
The theory that pyorrhea alveolaris is a constitutional disease, or the result of an impoverished condition of the blood, in my judgment, cannot be sustained by a reasonable symptomatology, or the facts so plainly present in the cases themselves. Fully fifty per cent. of the cases which have come under my observation have been patients of general good health, many of them robust and vigorous, either in the prime of life or but little past."

Of the treatment, he says:

I agree with Dr. Riggs and other writers on the subject, that the first and most important part in its treatment is the surgical. On its skill and thoroughness depends largely the success of the treatment as a whole. The requisite delicacy of touch in the explorations around each tooth, diagnosing and determining the extent and character of the dead and diseased tissues, as preliminary to an operation, may soon be acquired by practice. And the perfection to which this education of the sensory nerves of the fingers may be carried in determining the facts with so simple an instrument as an exploring needle, can be appreciated only by those who have had the experience.

After having determined the extent of the disease of the individual tooth to be operated on, select the required instruments and complete the operation on that before commencing another. If the disease is general you must be systematic, beginning either at the median line or on the posterior tooth of either maxilla, taking them in their order so that when the operation is completed you feel sure that no diseased part has escaped the scarification of your instruments. Among the various make and shape of instruments in the market I have found no

set of scalers which seem to fully meet the requirements of a general case of pyorrhea. Those most nearly approaching it are Dwinelle's, from which a set of seven may be selected, by modifying the points of which may be made to answer the purpose, very well. The ebony-wood



handles of these instruments, affording for the fingers a firm grasp, is a feature which commends them. Most instruments designed for this purpose are too heavy and cumbersome and are not shaped so as to be easily introduced into the deep pus-pockets often found attending this disease. I have found Sheffield's, however, too slender and springy, lacking the rigidity to withstand the force required in the removal of the deposits and dead osseous tissue. The foregoing cuts represent a set of seven points which I have found to be sufficient for all ordinary cases.

"Numbers 1, 2, 3 and 4 of these are points designed or modified by me, rendering them sufficiently delicate to pass between the gums and teeth without forcing or lacerating them unnecessarily, yet are sufficiently rigid and strong to accomplish the work. It will be noticed they are intended only for the draw cut, not having the chisel point so common in other instruments designed for the push cut. The push cut I regard as wholly needless and generally attended with much unnecessary wounding of the parts.

The form of these instruments will each suggest its own particular use to the intelligent practitioner.

At the close of each surgical operation, before dismissing the patient let the section which has been operated on be treated therapeutically.

This brings me to a point, on which there is a diversity of opinion,—as to the proper and best agents to employ. I am aware I lay myself open to criticism—inviting such terms as "narrow," "one idea," "empyric," etc.—when

I present but *one* remedy in my treatment of this disease in all its stages. But having experimented sufficiently with various agents, such as eucalyptus, chloride of alumina, peroxide of hydrogen, iodide of zinc, aromatic sulphuric acid, etc., I am enabled to state with much assurance, that after over nine years of its use I have found nothing equal to the *chloride of zinc*, and have for the last two years ceased experimentation with other remedies in this disease. Heroic treatment though it be, the result which follows—like a deed of charity—speaks its own praise.

The muriatic acid in this agent I think equal to the sulphuric as a solvent of the devitalized osseous structure, and the stimulating effect of the zinc renders it much more valuable. My method of applying it is very simple, yet careful—never trusting it in the hands of the patient for self application.

Obtaining the salts or crystals, dilute with water, reducing it from forty to sixty per cent. strong, according to the virulency of the case. Prepare a pencil of wedgewood by sharpening it to a thin, flat spatula point, about one-tenth of an inch in width. After drying the tooth and gum apply the remedy by dipping the wooden spatula into the solution to the depth of half an inch, shake off the pendant drops, introduce beneath the gum into the pockets, taking care to touch all affected parts. To single-rooted teeth one introduction is generally sufficient at a sitting; molars often require three or four. To apply to the posterior teeth prepare a similar wooden spatula, about an inch in length, and fasten in a porte polisher at such angle as may be convenient for the purpose.

After giving the remedy a few minutes to act, so as to produce eschar and dissolve any remaining dead tissue, wipe out the debris with broaches previously wound with fibers of cotton. In applying to the superior teeth, place the patient in a reclining posture, with the head tipped well back, so as to get the benefit of gravitation; otherwise introduce the solution on a small fiber of cotton, pushing it into the deepest recesses, allowing it to remain a few moments.

This treatment is generally attended with considerable pain, which passes off in the course of an hour. Before applying the remedy it is well to anoint the lips of the patient with glycerine or cosmoline, to prevent the escharotic effect if accidentally touched with the solution.

After a thorough and complete operation and application, the patient may be dismissed for a week or ten days, giving time for the healing of the wounded gum-tissue, so as to present at the following interview as nearly a normal condition of the case as may be, that correct diagnosis may be made of its progress toward a permanent cure.

If the treatment has been thorough, no general repetition o

either operation or application will be necessary. Some pus secreting pockets may yet remain, which a careful examination may reveal to contain sections of diseased alveoli which must be removed and treated as before.

Impress the patient with the importance of a frequent and thorough use of the brush, also manipulation of the gums with the fingers, pressing and brushing with a motion toward the crowns of the teeth. Such manipulation is doubly beneficial, inducing an increased circulation of the blood through them; it also forces out the viscid fluids from beneath them and extrudes the uncalcified sediment which they may contain.

AMALGAM.

One of the manufacturers of amalgam writes us: "I see this 'Medicine Company' assume to give the formulæ of your alloys. Do you think them reliable? The botch they make of mine indicates to me, they are guessing, and sometimes even very poorly at that. This is specially so in regard to my 'old' formula.

In it they put eight per cent. zinc and one per cent. platinum, neither of which ever entered into that amalgam. There is, in round numbers, about five per cent. copper, and yet they could find none! Indeed they have nothing in it nearly right, from one end to the other."

[We have already exposed their utter want of honor, honesty and truthfulness with our alloys.—ED.]

Feeding the Teeth.—Dr. J. Morgan Howe says: "I dissent from the idea which has obtained currency in the last few years, that the secret of the strength of the dental tissues, and their ability to resist deleterious influences, lies in the material or the quantity of it furnished the system. The notion of supplying lacking material by putting it in the stomach has obtained a very strong hold of the dental mind. It began, perhaps, in brown bread, and was followed by lime, introduced as such into the system, and one man has recommended in one of our journals that we should eat ground bone. Lime-salts have also been presented to the exposed pulp, in order that it might be induced to do its duty, as of course it would if it were not that it could not find enough lime to furnish material for a deposit of secondary dentine. These suggestions have appeared to me to reach the climax of absurdity."

Dr. James Truman prefers phosphate of zinc in cavities in the upper third of the labial surfaces of superior incisors, to gold, on account of harmony of color, even if he has to renew the operations occasionally.

A considerable display of gold, either in large labial fillings or in restoring corners of broken teeth, few object to, more than I do ; at the same time I believe that in certain cases, and specially for young people, a small line of gold showing in one or two of the anterior teeth, along their mesial surfaces rather enhance the beauty of the mouth. Besides being beautiful, it argued care and attention on the part of the person. To me it is an inspiration to see such work, not only because it takes skill and judgment to perform, but also because of its good taste. To fill such cavities so that the gold will not show, as recommended by some, would necessitate the destruction of the original contour of the tooth and catch the eye as a blemish, whereas the line of gold, would, by its very nature, disarm criticism.—E. H. NEAL.

Dr. M. H. Webb on Filling Teeth.—I have said many times during the past few years, that I cut away freely toward the buccal and palatal or lingual surface of the bicuspid and molar teeth, and at the cervical margin of cavities, so as to make all the edges of enamel free from contact. Calcification is often imperfect, and in all such cases the edges of enamel ought to be free from contact with any part of the teeth adjoining, and restoration with gold should be full and complete.

To perform fine operations, or to do genuine contour work (and this ought to be done in all cases,) it is necessary to use cohesive gold-foil, folded and cut into narrow strips ; and this should be put in place by the aid of the mallet ; all which requires time and care to be made useful and permanent.

Patients endure operations just in accordance with the way they are handled by the operator ; and he must first gain the confidence of his patient by being conscientious and sincere, and by showing that he knows exactly what he is about. He should always feel that he has living tissue to operate on ; and, while he ought to be kind and sympathetic, he can also handle his patient nicely and gently and perform his operation thoroughly. It need not often be necessary to keep a patient in the chair over two hours. I have known patients to suffer far more pain and fatigue in about an hour having come ordinary, and, perhaps, almost worthless fillings inserted by unskilled and careless hands, than during the performance of an extensive, difficult and fine operation, requiring a properly qualified practitioner four hours to perform.

Cocaine.—Dr. L. L. Hinshaw, of Edinburgh, Ind., says he has had considerable success with cocaine in abating pain in extracting teeth, specially in lancing the gums.

Lime-water and the Teeth.—It is undoubtedly good practice to rinse the mouth with lime-water, and the use of prepared chalk is also good as a precautionary measure, neutralizing, as it must, the acidity of the mouth; but whatever of the lime-salts enter into the teeth must be introduced through the system in the form of food. I am heartily in sympathy with the effort which is being put forth by parents and others to feed children largely on food which contains the phosphates in greatest abundance. I am not prepared to say that the effect of such food would be apparent in a single generation, but it is my firm conviction that the effect would tell beneficially in a few generations, and certainly those articles which contain the phosphates in large quantities are nutritious and pleasing.—E. T. DARBY.

Morphine for Sensitive Dentine.—I recommended it twenty years ago, in the *Dental Cosmos*, and gave cases. I am using it now in soft teeth. Dry the cavity first, and then fill with wet crystals of the sulphate of morphine; allow to remain ten minutes by the watch. Then excavate. The tooth must be protected from saliva.
ST. LOUIS, MO. HENRY S. CHASE.

Dr. Essig says the practice of some in endeavoring to increase the use of plastic fillings, specially amalgam, has gone too far when they recommends the filling of the front teeth with this material. He feels that the influence of such teaching and practice must necessarily be bad on the young men entering the profession.

Caution in Temporary Fillings.—"Doctor, will you please take a temporary filling out of a tooth? It aches and is sore." So said a patient to-day. I looked at the tooth, a posterior, under molar—pericementitis. "My dentist put the filling in four days ago, and said that the tooth was dead." "Did he make a vent hole?" "No." "Did he know that you were going from home and would not see him for two months?" "Yes." I removed the gutta-percha plug, which was air-tight, and told the patient to leave the cavity open till he should see his dentist.
ST. LOUIS, MO. HENRY S. CHASE.

The American Dental Association will hold its twenty-fifth annual meeting at Minneapolis, commencing August 4th. The present prospect is that it will be an unusually large and interesting one. The secretary sends us much in detail that is promised, but our August ITEMS will reach its readers so near the time of the meeting, these details would hardly be of service. The best thing you can do, gentlemen, is to pick up your hat, buy your ticket and start.

Editorial.

VINELAND AND TEMPERANCE.

HOW ITS LESSON MAY BE IMPROVED ELSEWHERE.*

Vineland, N. J., is often quoted as an example of the triumph of temperance. This is right ; it is a noble example, not only of practical prohibition, but (as necessary consequences) of thrift, good order, low taxes, and few paupers and criminals. Let us see what has made it such, and how temperance men elsewhere can follow her example.

It is generally supposed Vineland owes her success to the inherent law of her township organization. This is a mistake. Though over this tract of about ten miles square there is a provision in her organic law prohibiting the retail sale of spirituous liquors, this was so framed as to be but a stick of candy thrown to the founder to make him smile, and to draw settlers. In practice, it is worthless ; it was not intended to be enforced ; in fact, it has no penalties attached to its violation and makes no provision for its enforcement. The only exception to this statement is that (as in all corporate cities) it is left in each precinct for the voters to vote "License" or "No License." In one precinct they have always voted "License" ; in the others they have always voted "No License." With this exception the people of Vineland have fought liquor under the general law of the State. This law is no better than the liquor laws in most of the States, and not so good as in many of them.

For three years we were the Prosecutor of the Temperance League of that borough, and we extended our surveillance over the whole tract. Let us refer to our plan of operation :

The league was composed of many active temperance men. From these were selected twelve efficient workers. These twelve selected one of their number as Prosecutor. Under this Prosecutor were two or three detectives, and each detective had two or three associates. To work effectually,—

First—We became thoroughly familiar with the law ;

Second—We had it distinctly understood we meant business, and that business meant money to pay our detectives and the services of counsel where this was necessary, (for the prosecutor was not a lawyer) though the District Attorney took charge of cases when they were ready for the court ;

Third—We were careful to have every case well set up, so that we were almost invariably successful ;

Fourth—We thus made conviction on infraction so certain that,

*The following statement is made in reply to inquiries. Our general readers will please pardon us for digressing from the class of topics more immediately appropriate to a dental journal.

after the punishment of a few, others were loath to undertake the nefarious business.

What lessons do temperance men elsewhere learn from this?

First. Make thorough investigation of the laws of your State bearing on the liquor traffic. You will be astonished to see how much good there is in them, and how much more efficient they may be made than is generally supposed. We speak from a personal knowledge of the liquor laws in nearly every State. It is well to look for better laws, but you can hardly know what you want till you have done your best with those you have. Without this effort you will not be worthy of laws that are better, and if you had them the public generally would not be ready to enforce them. Let your efforts to obtain better laws, therefore, be continually mingled with your most strenuous labor to make the best of existing laws.

Second. Remember, laws will not enforce themselves. The best of them are worthless unless brought into activity by thorough enforcement. You say the officers of the law should do this. So they should ; but if they do not, private citizens must. Besides, in the enforcement of all laws, good citizens are supposed to co-operate with the authorities. In theft, for instance, a citizen generally makes known the violation of the law—(and if he does know of its violation and does not make it known to the authorities, he is held to be guilty with the offender) ; he becomes prosecuting witness ; he swears out a warrant and is expected to appear at the trial with proper witnesses. We sometimes do the authorities injustice by supposing them indifferent when they simply need a good backing up by temperance men. Do not quarrel with and denounce them ; rather seek to co-operate with and encourage them. Eight years ago some temperance men from Millville, a city of 12,000 inhabitants, six miles from Vineland, came to us to come down and show them how to enforce the laws bearing on intemperance. Millville had always been noted as the worst rum-ridden city in New Jersey. They said their Mayor would do nothing. We went to see him. Said he : “These temperance men are cowards. Though they know these rummies are violating the law, they dare not face them in court with proper witnesses. I cannot be judge and witness both. Bring me a man who will prepare cases for trial, as you do in Vineland, and I will shut up every gin-mill in Millville.” A resident, I had taken with me to see the Mayor, said : “Mayor, I am your man.” They shook hands, and both were in earnest. Temperance men backed up their leader in moral, associate and pecuniary help. Every saloon was closed within twelve months, and from that time to this it has been as strictly a temperance town as Vineland.

But you say these saloon keepers must have violated some law, or they could not have been suppressed. Yes, they had ; and where is

the rumseller, licensed or unlicensed, who does not violate the law?

Third. Show manly courage and daring aggression; not vindictiveness, passion, and inconsiderate rashness. Be undaunted, yet prudent; irrepressible, yet wise; uncompromising, yet conciliatory. Do not talk much nor threaten. In fact, after you get to work, the less said the better. Let your work do the talking, and let the results of your work be your eloquence. Steady, unspasmodic, intelligent, continuous labor will win.

Fourth. Make no compromise. When you have proof of their selling on Sunday, or selling to minors, or selling to drunkards, or to intoxicated persons, or to persons they have been prohibited selling to, or of their keeping a disorderly house, or of their allowing gambling, pool for money, cigars, or drinks, or other misdemeanors, don't compound the crime—and thus make yourself guilty before the law—by agreeing with them to pass over the offense if they will do so no more. Prosecute them. The promise of men engaged in such a business is worth nothing, and they only make it that they may continue their nefarious work. Don't try to make saloons respectable places. You can't do it. Suppress them.

Fifth. If you cannot give personal attention to this work, give liberally to those who can.

Sixth. Do not be discouraged at the bad laws under which you act, nor of the apathy and consistency of friends, nor of the threatenings, abuse, and actual injury of rummies. Three years ago, the liquor law of Philadelphia was thought too loose, and too subservient to saloonists, to be of any use for their suppression; but a few bold friends of temperance determined to do what they could. The more the law has been tested the more efficient it has been found. Now there is quite a successful work being done. Our purpose is to so enforce the present law that the public will be able to demand, and to obtain, and to enforce, prohibition.

The Chicago College of Dental Surgery makes its fourth announcement. Its faculty are selections of well-known, intelligent and practical dentists; its standard of instructions are abreast the foremost dental colleges, and it evidently intends to merit a position of the first-class. The result of the competition between the dental departments of general colleges and universities, and colleges giving exclusive attention to dentistry, can hardly yet be determined; both have their advantages.

The Archives of Pediatrics, of Philadelphia, is a useful monthly, devoted to the diseases of children. Wm. P. Watson, A. M., M. D., editor.

LITTLE THINGS IN THE ART OF COMPOSITION.

In July we referred to a few superfluous *prefixes*: Amidst for mid, *disannul* for annul, *downfall* for fall, *although* for though, *remove* for move, *selfsame* for same, *upon* for on, and *until* for till.

Let us now look at a few

WORDS WRONGLY USED.

Alone and *only* are often wrongly used. *Alone* means *by oneself*; *only* means *that one*; therefore—"Those elements of tooth-food which the mother *alone* can supply" is wrong; it should be, which she *only* can supply.

"He *alone* can bring life" is improper. It is not because He is *alone* that gives him this power, but He is the *only* one who can bring life. "She *alone* filled his ideal." Perhaps he preferred to meet her *alone*—that is, unaccompanied; but evidently his thought here is that she *only* filled his ideal. An *only* child is where there is none besides this one. A child *alone*, may have brothers and sisters absent; an *only* child can not have. The distinction is seen in "I am *alone* again, but *only* for a short time." "Only while *alone* am I happy." "Let me *alone*, there is only one I prize."

Abortive is that which is brought into action prematurely—that which fails for want of maturity. Therefore it is wrong to say, "The plan, though matured with great care, was *abortive* in its execution." It simply *failed*. "The undertakings of many men, though matured with the greatest wisdom, are *abortive* for want of attention to details." The writer means, these undertakings *fail*.

Affect and effect. There is a fine distinction between these words, not generally observed. "I *effected* this slowly," is wrong; so is, "It became *affected* slowly." We often read of the *affect* one thing has on another, and of the *affect* produced by certain influences. Both expressions are wrong. To *affect* is to act on; *effect* is the result of the action. That is, we *affect* a change and the change *affected* is the *effect*. The cause is the *affect*, and the *consequence* produced by the *affect* is the *effect*.

The word *balance* is often misused. It does not mean remainder, so that we cannot properly say "The *balance* of my account is \$2.50," unless this is the whole of the account. There is a sense in which *balance* may refer to the last payment to close an account, as "I *balanced* my indebtedness by the payment of \$2.50. Then the figure is: In one side of the scales is my indebtedness, in the other side are my previous payments; I *balance* the scales by this last payment of \$2.50. The whole of my payments is the *balance* of my indebtedness. It is therefore wrong to say, "The *balance* of my journey was tedious," "The *balance* of the work was difficult," "The *balance* of the essay will appear in the next number."

We often read of "a bountiful meal," "a bountiful harvest," and "a bountiful supply of this world's goods," but these expressions are all incorrect. A meal is a *bounty* if given in charity, and the one who gives it is a bountiful giver. Bountiful always includes the idea of a bounty, and to be a bounty, it must be a gift, and its munificence shows the bountifulness of the giver.

Too many use *character* and *reputation* interchangeably. "He bore a bad character in his own neighborhood" is wrong; so is, "His reputation could be seen upon [on] his very features." Character is the real quality of the man; reputation the estimation in which he is held by others.

"I *consider* strawberries better than apples," is incorrect. The preference is not a matter of *consideration* but of matured judgment. To *consider* is to meditate on—to mature an opinion.

"A *couple* of ladies fell upon [on] the ice" is wrong; so is the sentence, "The club offered a couple of prizes." A couple not only means two, but two bound together; as, "Jones and his wife are a happy couple."

"The legislature was *convened* by the Governor," is wrong, though he may *convoke* it. Convene is to come together; convoke is to call together.

A *crime* is not necessarily a sin, or a vice, or even a moral evil; it is simply a violation of some enactment of the State. Therefore, though to violate an enactment is a crime, it depends on its character to determine whether its infraction is a sin or a virtue.

A *law* is the embodiment of some truth or right, therefore all State enactments are not necessarily laws.

Divine, as an adjective representing divinity is proper, but as a noun, to represent a man—as, "He is a divine"—partakes too much of the assumptive. It is ascribing to a man a character which can only belong too God.

Dock and wharf are of different meaning. A dock is an open space into which anything is received. A prisoner is placed in the dock for trial. A ship may lie *at* the wharf but, if needing certain repairs, is brought *into* the dock. A man may fall *into* a dock, but he could not fall off a dock any more than he could fall off a hole.

Due is used too loosely. It really means indebtedness; as, "The wages due [owed him] were paid cheerfully." But we speak of "due notice," when we mean prompt notice. "Carries is due to external causes," when it is meant is caused by them. Thus we make it do service for timely, cause, proper, sufficient, result, credit, charge, abundant, exactly, promised, and many other ideas. As "Due [timely] indications were given of his approach;" "Sickness is often due to [caused by] carelessness;" "We must give due [proper] credit to

genius ;” “ We must give due [sufficient] weight to clear argument ;” “ His death was due to [the result of] improper living ;” “ It is due [to his credit] to say he intended no wrong ;” “ We sailed due [exactly] east ;” “ The government due [charge] must be met.” Due [abundant] time will be allowed for recreation ;” “ He came in due [promised] time.”

The Dental Department of the University of Pennsylvania is now in complete operation. In fact, during the last year, the attendance has been one hundred and twelve, with thirty-five graduates. For a new departure this is excellent. Young men desirous of taking a dental course may be assured of every facility for thoroughness. The reputation of this University is world-wide and therefore the standing it gives to its graduates is quite a consideration.

The Dental Department of Vanderbilt College is in a thriving condition. At the last session there were fifty-five matriculates and twenty-five graduates. The faculty is well appointed, the facilities are ample, and the course is thorough. Graduation from this college carries weight with it.

The Mississippi Dental Society meets at Jackson, August 4th ; and the *Virginia Society* at Charlottesville, August 10th.

The Fourth Annual Meeting of the Central Illinois Dental Society will be held in Bloomington, Ill., on the second Tuesday in October, 1885, and continue three days. Visiting brethren are cordially invited to be present.

J. D. MOODY, *President*,
Mendota, Ill.

C. R. TAYLOR, *Secretary*,
Stenton, Ill.

The Northwestern Dental Association meets at Fargo, Dakota, Friday, August 7th.

The Southern Journal of Health is a new monthly published at Ashville, by H. P. Galchell, M. D. Ashville is an appropriate place for the publication of such a journal ; for we suppose there are few places in the United States so noted for its healthfulness. It is neatly gotten up and full of interesting articles.

The Comparative Value of Amalgams and Alloys.—Dr. Register, of this city, informs me that for several years he has kept a record of cavities filled with different makes of plastic fillings, that he may learn their comparative value. A good idea.

Miscellaneous.

A BIG FAMILY.

The sun is the head of a wonderful family which he rules absolutely and beneficently. This family is composed of the planets and their moons, the planetoids or little planets, the comets, and the meteorites or shooting stars. Rushing through space at the rate of probably over four hundred thousand miles a day, the sun carries all the members of his family with him, or, rather, keeps them circling round him with intense velocity. At the same time the sun revolves or spins round on his own axis once in about twenty-five days. The planets revolve in a similar manner each round its own axis, while they are whirling round the sun, and with the sun probably whirling round some distant but unknown center of gravity, and all the time the moons are circling round the planets, which are circling round the sun, which is doubtless circling round some greater sun. What a wonderful complexity of motion, yet all is kept in harmony so perfect that astronomers are able to calculate to a minute not only the time when the sun will appear to rise or set, but even the time at which an eclipse of the sun will be caused by the moon coming between us and it. The planets differ from each other very much in size and rapidity of motion and in their distance from the sun. Jupiter, for instance, is about 1400 times as large as the earth, and four times as far from the sun; yet Jupiter, big as he is, turns round in ten hours, so that his day is only five hours long. The farthest planet, Neptune, is about 3000,000,000 of miles from the sun.

The sun is about 91,500,000 miles distant from the earth on an average (he is 3,000,000 of miles nearer us in winter than in summer). It would take a limited express "air-line" train, going sixty miles an hour without stopping, one hundred and seventy-three years to reach the sun. Yet, even at this immense distance, the sun is able to exert a power over our globe which keeps it swinging round him like a stone in a sling. This is done by the force of gravitation, and indicates the enormous weight of the sun in proportion to that of the earth.

A COMPARISON.

The sun's diameter is over one hundred times as great as the diameter of the earth. Suppose the earth reduced to the size of a large pea, say a quarter of an inch in diameter, the sun to be in proportion would be represented by a large pumpkin, twenty-five inches through, or six feet three inches in circumference. The large planet Jupiter would, on the same scale, be the size of a large orange, two and three-quarter inches in diameter, while our moon would be scarcely larger than the head of a pin. Even these figures do not, however, give a just appreciation of the size of the sun. Perhaps we can form a better idea of it by remembering that though the earth is twenty-four thousand miles in circumference, it would take twelve hundred thousand such bodies rolled into one to make a globe the size of the sun.

Our young readers should try to remember these remarkable results of study by astronomers.—*N. Y. Witness.*

A BRIEF SERMON ON CRANKS.

What would we do were it not for the cranks? How slowly the tired old world would move, did not the cranks keep it rushing along! Columbus was a crank on the subject of American discovery and circumnavigation, and at last he met the fate of most cranks, was thrown into prison, and died in poverty and disgrace. Greatly venerated now! Oh, yes, Telemachus, we usually esteem a crank most profoundly after we starve him to death. Harvey was a crank on the subject of the circulation of the blood; Galileo was an astronomical crank; Fulton was a crank on the subject of steam navigation; Morse was a telegraph crank. All the old abolitionists were cranks. The Pilgrim Fathers were cranks; John Bunyan was a crank; any man who doesn't think as you do, my son, is a crank. And by and by the crank you despise will have his name in every man's mouth, and a half completed monument to his memory crumbling down in a dozen cities, while nobody outside of your native village will know that you ever lived. Deal gently with the crank, my boy. Of course, some cranks are crankier than others, but do you be very slow to sneer at a man because he knows only one thing and you can't understand him. A crank, Telemachus, is a thing that turns something, it makes the wheels go round, it insures progress. True, it turns the same wheel all the time, and it can't do anything else, but that's what keeps the ship going ahead. The thing that goes in for variety, versatility, that changes its position many times a day, that is no crank; that is the weather vane, my son. What? You nevertheless thank heaven you are not a crank? Don't do that, my son. May be you couldn't be a crank, if you would. Heaven is not very particular when it wants a weather vane; almost any man will do for that. But when it wants a crank, my boy, it looks about very carefully for the best man in the community. Before you thank heaven that you are not a crank, examine yourself carefully, and see what is the great deficiency that debars you from such an election.—*Hawkeye.*

The Melbourne *Spectator* has this apt advice forcibly expressed to correspondents:

“When writing an article for the press,
Whether prose or verse, just try
To utter your thoughts in the fewest words,
And let them be crisp and dry;
And when it is finished, and you suppose
It is done exactly brown,
Just read it over again, and then—
Boil it down.”

Cement for Porcelain.—Four parts of alabaster gypsum are mixed with one part of powdered gum-arabic, and the mixture rubbed up to a thin paste with a saturated solution of boracic acid prepared in the cold.

The following is recommended for applying a thin coating of pure silver: Nitrate of silver 80 parts, dissolved in 36 parts of pure water; add 40 parts of salammoniac and 160 parts of hypophosphite of soda and 160 parts of whiting. Apply with a chamois skin or a piece of cloth.

Dalmatian Powder.—A writer in the *Independent Journal* (N. Y. says: *Pyrethrum cinerariaefolium* is, and has proved itself to be, the best insecticide yet discovered. A valuable boon to the housekeeper. An article that pharmacists can readily dispense without going through the necessity of putting a score or more of questions to the customer, and then writing all the answers down in a register. From the number of cases reported where it has been taken internally, by mistake, I would conclude that the powder is not poisonous. The only perceptible effects experienced while using the powder freely in a closed room, and inhaling it for a long time, would be sneezing and a slight confusion of the head. I would urge that all dealers exercise the greatest caution as to the quality of insect powder they sell. As it is becoming a household article, as well as a necessity, the more frequently mistakes will occur. A pure powder will be a safeguard against any fatal results if taken by mistake, while an adulterated article may, if taken by mistake, result in loss of life.

For Asthma, nitrate of potassa is said to be invaluable. Make a strong solution of it in boiling water; dip into this sheets of common, brown wrapping-paper, and dry. Burn one of these sheets in your sleeping-room before going to bed and when troubled with an asthmatic spasm.

A New Treatment of Tape Worm.—Dr. Howard Pinkney, writing from Sharon Springs, describes his experience with the oil of the pine-needle, made from the *pinus punilio*. A hall-boy of the hotel had suffered for five years from tape-worm. He had been treated for four years in New York, but never had succeeded in getting rid of over four feet of links at a time. Dr. Pinkney, not being able to get any male fern, pelletierine, or pumpkin seeds, therefore tried the following experiment: "The patient fasted from breakfast, and at nine P.M. he was given one teaspoonful of oil of the pine-needle in half a glass of milk. The following morning, as there was no perceptible action of the medicine, the dose was doubled. This, the boy said, had a most disagreeable taste. One hour later he took a dose of castor-oil; and in the course of two hours after this he passed an entire *tænia solium* measuring fifteen feet six inches in length, and one-half inch at its broadest part, gradually tapering down to almost a thread. To be positive that none remained behind, he was given two teaspoonfuls more; but no sign of any worm or part thereof passed. "This oil," writes Dr. Pinkney, "contains no turpentine, is fragrant in its odor, and, when mixed with milk, very agreeable to the taste. It produces no strangury tenesmus, or other unpleasant or distressing symptoms. The patient can generally pursue his ordinary vocation."

A sympathetic ink for writing on postal cards is simply diluted sulphuric acid—one part to seven of water. When the ink is applied the card will at first show roughened traces of the writing, but after drying this disappears and the writing is as invisible as though done with water alone. If it is desired to avoid the suspicion of sympathetic ink having been employed, the card may be written on across the first writing with tincture of iodine, which will entirely fade out when heat is applied to develop the sympathetic ink.

A VICTIM OF CIGARETTES.

A son of one of the professors at Columbian University, Washington, died suddenly recently after a short detention in his room. So sudden was the attack that a party of young men who had been invited by the deceased to call upon him and play whist, kept their engagement only to find their friend a corpse. It was learned that the deceased, who was employed in the Patent Office, had been in the habit of indulging in cigarettes excessively and inhaling the smoke. Two physicians held a consultation, and after investigation decided that this practice had exercised a depressing effect upon the action of the heart, and had hastened death. Aortic regurgitation was given as the primary cause of death, which had been increased by the indulgence of the deceased in the inhalement of cigarette smoke. Everything possible was done by the physicians for their patient, but his constitution had been too surely undermined, and in his last days he was unable to rest quietly in bed, but maintained a sitting position.

How to Keep Cider, or Other Fruit Juices, Sweet.—When the saccharine matters by fermentation are being converted to alcohol, if a bent tube be inserted air-tight into the bung, with the other end in a pail of water, to allow the carbonic acid gas evolved to pass off without admitting any air into the barrel, a beverage will be obtained that is fit nectar for the gods.

A handy way is to fill a cask nearly up to the wooden faucet, when the cask is rolled, so that the bung is down. Get a common rubber tube and slip it over the end of the plug in the faucet, with the other end in the pail. Then turn the plug so the cider can have communication with the pail. After the water ceases to bubble, bottle or store away.—*Farm, Field and Fireside.*

Acute Rheumatism.—Dr. J. W. Futrell writes: I have tried many remedies but none have yielded me the uniform satisfaction I have derived from the following agents, simple as they may seem to be. I begin the treatment by putting one ounce each of Epsom salts, nitrate of potash and powdered sulphur, into one quart of boiling water. This, after being allowed to stand in a covered vessel for six hours, is well strained and given in doses of one ounce three or four times during the day. To the swollen and painful joints I apply, by means of cloths, a liniment composed of—

Olive oil.....	oz. 5
Chloroform.....	oz. 2
Hartshorn.....	dr. 6
Tincture of aconite root.....	dr. 2

Apply sufficiently often to relieve pain.

Should the above means not secure rest at night, I administer a full dose of bromide of potash, and repeat in one hour, if necessary. I have now used it in quite a number of cases of acute and even violent rheumatism, and have not seen it fail to do good.—*Health and Home.*

Sharpening Dull Files.—After thoroughly cleaning with soap, alkali and a stiff brush, immerse them in one part nitric acid, three parts sulphuric acid, seven parts water. They should remain from a quarter of a minute to a half hour, according to the fineness of the cut. Now wash them in hot water, dip them in the milk of lime (water which has been saturated with quick-lime), and then dry and oil.

Cement for Patches on Shoes.—The cement used in patching the uppers of fine shoes is generally made by dissolving gutta-percha in chloroform until the mixture is about as thick as syrup. Scrape and pare clean round the hole to be covered, and thin carefully, with a chamfer, the edges of the bit of leather to be applied. Only a little of the cement is needed, but the surfaces must be pressed close together. The parts will adhere firmly in a few minutes.

Cough Mixture.—Syrup of tar, syrup of ipecac, syrup of wild cherry, of each two ounces. Teaspoonful four times a day.

Alkaline Laxative.—Chloride sodium, one drachm; bicarb. soda, four drachms; carbon calcium, one and a half drachm; sulph. soda, one and a half ounce. Dose, two drachms.

Soap Bubbles.—The following is said to be good: Plateau's mixture is thus prepared: 1 part of Marseilles soap is dissolved in 40 parts of water, at a moderate heat. It is filtered through very porous filter paper, after cooling, and 15 parts of the solution are mixed with 11 of Price's glycerine. The mixture is thoroughly shaken, and is allowed to stand for seven days in a room that is not too cold (over 67° Fah.). On the eighth day it is cooled for six hours to a temperature of 37° Fah. and filtered. A bottle of ice should be kept in the funnel. The first portions may need refiltering. Very porous paper must be used. Halbhook's brown oil silk soap or his Gallipoli soap, and Scheering & Glatz's glycerine work very well. The second filtration may be omitted—long standing and decantation from the sediment being used. After all the trouble the mixture may not give very good results.

A snake story comes from Early county, Ga., and is thus told: Burtel Roberts noticed, one day last week in his rambles, a very large king snake that acted in a very strange manner. He went nearer, and upon examining the snake, found that its head had been cut off some days, and the wound had healed entirely up. His snakeship was in good condition, and crawled off as if nothing was the matter.

Will some one please give in the next ITEMS the process of uniting vulcanite and emery so as to vulcanize into a solid mass? QUIZ.

[We know of no better way than warming a sheet of the rubber before vulcanizing, and then working the corundum or emory in—pressing into moulds of the shape desired. If considerable powder is desirable, make the rubber thin with chloroform.—ED. ITEMS.]